IN THE CLAIMS

1-61   (canceled)

62.   (new)   An apparatus comprising:

an input arranged to provide a received signal having a frame structure in which a frame comprises a plurality of data segments and a frame synch segment;

a first convolutional deinterleaver characterized by deinterleave parameters $B(1)$, $M(1)$ and $N(1)$, wherein the first convolutional deinterleaver is arranged to convolutionally deinterleave the received signal in accordance with the deinterleave parameters $B(1)$, $M(1)$ and $N(1)$ to produce a first deinterleaved signal, wherein the first convolutional deinterleaver comprises $B(1)$ paths, wherein $M(1)$ is a unit delay through a path, and wherein $N(1) = M(1)B(1)$; and,

a second convolutional deinterleaver characterized by deinterleave parameters $B(2)$, $M(2)$ and $N(2)$, wherein the second convolutional deinterleaver is arranged to convolutionally deinterleave the first deinterleaved signal in accordance with the deinterleave parameters $B(2)$, $M(2)$ and $N(2)$ to produce a second deinterleaved signal, wherein the second convolutional deinterleaver comprises $B(2)$ paths, wherein $M(2)$ is a

unit delay through a path, wherein $N(2) = M(2)B(2)$, and

wherein each of the first and second convolutional

deinterleavers is synchronized to the frame synch

segment.

63. (new) The apparatus of claim 62 wherein

$B(1) = 52$, wherein $M(1) = 4$, wherein $N(1) = 208$, wherein

$B(2) = 46$, wherein $M(2) = 4$, and wherein $N(2) = 184$.

64. (new) The apparatus of claim 62 wherein

$B(2)$ is an integer, is constant from frame to frame, and

is equal to the number of bytes BY in a frame of the

second deinterleaved signal divided by an integer I, and

wherein both BY and I can vary from frame to frame.

65. (new) The apparatus of claim 64 wherein

$B(2) = 46$.

66. (new) The apparatus of claim 62 wherein

each of $M(2)$ and $B(2)$ is a constant integer, wherein

$M(2)B(2)$ is equal to the number of bytes BY in a frame of

the second deinterleaved signal divided by an integer I,

and wherein both BY and I can vary from frame to frame.

67. (new) The apparatus of claim 66 wherein M(2) = 4, and wherein B(2) = 46.

68. (new) The apparatus of claim 62 wherein M(1) = M(2).

69. (new) The apparatus of claim 62 wherein the deinterleave parameters B(1) and B(2) have different values.

70. (new) The apparatus of claim 62 further comprising a decoder arrangement operating to effectively decode the received signal at a decoding rate of 2/3 times K/L, wherein K/L < 1.

71. (new) The apparatus of claim 70 wherein K/L = 1/2.

72. (new) The apparatus of claim 70 wherein K/L = 1/4.

73. (new) The apparatus of claim 62 further comprising a decoder arrangement operating to effectively decode the received signal at decoding rates of 2/3 times

K/L and of 2/3 times P/Q, wherein K/L ≠ P/Q, wherein K/L
< 1, and wherein P/Q < 1.

74.   (new)   The apparatus of claim 73 wherein
K/L = 1/2, and wherein P/Q = 1/4.

75.   (new)   An apparatus comprising:

a first convolutional interleaver characterized
by interleave parameters B(1), M(1) and N(1), wherein the
first convolutional interleaver is arranged to
convolutionally interleave data to be transmitted in
accordance with the interleave parameters B(1), M(1) and
N(1) to produce a first interleaved signal, wherein the
first convolutional interleaver comprises B(1) paths,
wherein M(1) is a unit delay through a path, and wherein
N(1) = M(1)B(1);

a second convolutional interleaver
characterized by interleave parameters B(2), M(2) and
N(2), wherein the second convolutional interleaver is
arranged to convolutionally interleave the first
interleaved signal in accordance with the interleave
parameters B(2), M(2) and N(2) to produce a second
interleaved signal, wherein the second convolutional
interleaver comprises B(2) paths, wherein M(2) is a unit

delay through a path, and wherein $N(2) = M(2)B(2)$, and wherein each of the first and second convolutional interleavers is synchronized to a frame synch segment; and,

a transmitter arranged to transmit the second interleaved signal in a frame structure in which a frame comprises a plurality of data segments and the frame synch segment.

76. (new) The apparatus of claim 75 wherein $B(1) = 46$, wherein $M(1) = 4$, wherein $N(1) = 184$, wherein $B(2) = 52$, wherein $M(2) = 4$, and wherein $N(2) = 208$.

77. (new) The apparatus of claim 75 wherein $B(1)$ is an integer, is constant from frame to frame, and is equal to the number of bytes BY in a frame interleaved by the first interleaver divided by an integer I, and wherein both BY and I can vary from frame to frame.

78. (new) The apparatus of claim 77 wherein $B(1) = 46$.

79. (new) The apparatus of claim 75 wherein each of $M(1)$ and $B(1)$ is an integer and is constant from

frame to frame, wherein M(1)B(1) is equal to the number of bytes BY in a frame interleaved by the first interleaver divided by an integer I, and wherein both BY and I can vary from frame to frame.

80. (new) The apparatus of claim 79 wherein M(1) = 4, and wherein B(1) = 46.

81. (new) The apparatus of claim 75 wherein M(1) = M(2).

82. (new) The apparatus of claim 75 wherein the interleave parameters B(1) and B(2) have different values.

83. (new) The apparatus of claim 75 wherein the second convolutional interleaver includes an encoder arrangement operating to effectively encode the first interleaved signal at an encoding rate of 2/3 times K/L, wherein K/L < 1.

84. (new) The apparatus of claim 83 wherein K/L = 1/2.

85. (new) The apparatus of claim 83 wherein K/L = 1/4.

86. (new) The apparatus of claim 75 wherein the second convolutional interleaver includes an encoder arrangement operating to effectively encode the first interleaved signal at encoding rates of 2/3 times K/L and of 2/3 times P/Q, wherein K/L $\neq$ P/Q, wherein K/L < 1, and wherein P/Q < 1.

87. (new) The apparatus of claim 86 wherein K/L = 1/2, and wherein P/Q = 1/4.